1. Simplify the expression below and choose the interval the simplification is contained within.

$$13 - 4^2 + 11 \div 17 * 15 \div 10$$

A. $[29.43, 30.3]$

B. $[-2.83, -1.86]$

C. $[-3.87, -2.33]$

D. $[28.66, 29.69]$

E. None of the above

---

2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{-2160}{9}}$$

A. Rational

B. Not a Real number

C. Irrational

D. Whole

E. Integer

---

3. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{9 - 77i}{8 - 6i}$$

A. $a \in [533, 535]$ and $b \in [-6.5, -4.5]$

B. $a \in [-4.5, -2.5]$ and $b \in [-8, -6]$

C. $a \in [4.5, 6.5]$ and $b \in [-6.5, -4.5]$

D. $a \in [1, 2.5]$ and $b \in [12, 14]$

E. $a \in [4.5, 6.5]$ and $b \in [-562.5, -561]$

---

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(4 - 9i)(-2 - 10i)$$

A. $a \in [79, 87]$ and $b \in [56, 62]$

B. $a \in [-16, -7]$ and $b \in [88, 93]$

C. $a \in [-99, -94]$ and $b \in [19, 23]$

D. $a \in [-99, -94]$ and $b \in [-24, -21]$

E. $a \in [79, 87]$ and $b \in [-64, -57]$

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5. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{0}{15}} + \sqrt{4}i$$

A. Rational

B. Irrational

C. Not a Complex Number

D. Pure Imaginary

E. Nonreal Complex

---

6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-8 + 5i)(-9 - 7i)$$

A. $a \in [31, 44]$ and $b \in [98, 104]$

B. $a \in [65, 78]$ and $b \in [-37, -29]$

C. $a \in [107, 110]$ and $b \in [11, 15]$

D. $a \in [107, 110]$ and $b \in [-15, -7]$

E. $a \in [31, 44]$ and $b \in [-101, -99]$

---

7. Simplify the expression below and choose the interval the simplification is contained within.

$$5 - 13 \div 19 * 7 - (20 * 4)$$

A. $[84.7, 85.14]$

B. $[-79.27, -77.74]$

C. $[-75.97, -73.49]$

D. $[-80.42, -79.52]$

E. None of the above

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8. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-1575}{15}} + \sqrt{60}$$

A. Rational

B. Nonreal Complex

C. Not a Complex Number

D. Pure Imaginary

E. Irrational

---

9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-36 - 77i}{-1 + 6i}$$

A. $a \in [-428, -425.5]$ and $b \in [6, 8.5]$

B. $a \in [13, 14.5]$ and $b \in [-4.5, -3]$

C. $a \in [-12.5, -11]$ and $b \in [292.5, 294]$

D. $a \in [35, 37.5]$ and $b \in [-13.5, -12.5]$

E. $a \in [-12.5, -11]$ and $b \in [6, 8.5]$

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10. Choose the **smallest** set of Real numbers that the number below belongs to.

$$\sqrt{\frac{-525}{5}}$$

A. Whole

B. Not a Real number

C. Rational

D. Integer

E. Irrational
